

X
JOTTINGS ON VITALITY;

OR,

THE PHYSICAL BASIS OF LIFE.

Reprinted from the "N. S. W. Medical Gazette."

BY

ANDREW ROSS, M.D.,

MASTER IN SURGERY OF THE UNIVERSITY OF GLASGOW.

FORMERLY FOR SEVERAL YEARS ASSISTANT MEDICAL OFFICER,
UNDER DR. DIGBY, TO THE SOUTH DISTRICT OF THE WEST LONDON UNION
AND ASSISTANT SANITARY INSPECTOR FOR THE CITY OF LONDON.

AND ALSO, FORMERLY

ASSISTANT SURGEON 68TH CAMBRIDGESHIRE MILITIA,

QUARTERED AT PALATINE BARRACKS,

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IN offering a few remarks on so complex and important a subject, I need not do more, by way of preface, than merely state that I do not intend to attempt to give any definition of so abstruse a matter; suffice to say, it is a question in the present imperfect state of our knowledge that has hitherto, at least, baffled all discovery, or even description—a matter, in fact, as yet seemingly entirely beyond the mental grasp and depth of our most comprehensive thinkers, or even our greatest and most brilliant philosophers. It is a subject, nevertheless, it may well and truly be said, that is, of late years, and in various obvious directions, beginning to attract special and vigorous attention, and, no doubt, therefore, gradually receiving new and fresh inspiration from wider and deeper fields of research, if not, also, more satisfactory investigations and revelations at the hands of a few of our more active, patient, and enlightened working physiologists, medical reformers, and scientific explorers. In short, our boasted, yet superficial enlightenment of the present age, will be but as nothing when compared with the endless disclosures of rich treasures and vast stores of useful knowledge that will be made by the womb of time for man's benefit, within the short period of the next half century or century. In the midst of all our arrogance and vast erudition, are we not often humbly compelled to acknowledge, in too many instances, our utter helplessness and inability to cope with many of the ills which flesh is heir to; if so, can we deny that further enlightenment and improvement is not needed? To talk of curing disease when little or nothing is really known of physiology and morbid anatomy, savours strongly of practising something too much akin to the art of mere routine or empiricism. How can the would-be learned practitioner pretend to cure, *e.g.* cholera, hydrophobia, tetanus, cancer, &c., when it must be candidly and openly admitted that their real nature, origin, and cause, are matters as much involved in an impenetrable cloak or dense haze of mystery as ever. The increasing number, the thousand and one quack nostrums offered for the cure of

these and sundry other malignant ailments, will never let us into the true secret until the restless, undaunted observer plunges fearlessly into the midst of its numerous subtle recesses, and there and then unremittingly persists in striving to find out, by watching closely, its most obscure, unmerciful, deadly development and hydra-headed operations. At this present time, do we really know one iota more of the nature or rational treatment of cholera, tetanus, hydrophobia, cancer, &c., than we did fifty years ago? Yet we presume to have discovered an infinite number of infallible remedies for what—for diseases of which (there is no possibility of denying) we know nothing, or but really very little, as they continue to mow down thousands and tens of thousands, as unmolested and rampant as ever. Yes, and plume ourselves, in the event of an accidental recovery occurring, of having been, not the means of mastering the ruthless ravages, by the application or administration of some paltry, worthless remedy, but of deceiving ourselves and our all-complacent patients into the bargain—taking credit for things, in fact, which should more properly be placed in the category of luck, or attributable to blind ignorance, and may be oft, unwittingly perhaps, too, helping nature to shuffle off this mortal coil, as we keep groping for our way in the dark, while administering, or sitting watching in the midst of our helpless, powerless art. It would be about as rational and natural to blindfold a person in Sydney, and then expect him to find his way in this state to Parramatta, Bathurst, or Fort Bourke, as expect any degree of successful treatment in these vague diseases until the impenetrable cloak which now conceals them from view is first thoroughly and radically removed. If any man told me that he had made a successful or radical cure of a case of hydrophobia, tetanus, cholera, or cancer, &c., I'd hesitate not to tell him that he was worse than a thorough, rank, ignorant impostor, a greater curse, in fact, upon society than even the disease which he pretended to have cured, far less to understand. Just as well stick a label on the ocean, and expect a man to continue to take it till he drinks it dry, as try to deal effectually with some of these hidden maladies, or on any other rule but downright, sheer, open quackery, a thing that must be loathsome to the feelings and honest pride of every skilful, honourable practitioner. Misplaced faith in the power of medicine may have the imaginary effect of, for a time, stemming the tyrant's insidious but deadly invasion; the throbbing, burning, agonised nerves may be temporarily soothed, or buoyed up under the influence of hypocrisy, deceit, or base falsehood; while the fangs of an unquenchable monster may be irresistibly sinking itself deeper and deeper into the slowly ebbing tortured vitals of an acutely suffering patient. Heroic systems of treatment may captivate the ignorant, or seem outwardly the most lion-like way of dealing with inveterate ailments; but it is to patient practice alone, attending to every trivial minutia that comes under notice, that will be found, I firmly believe, the grand step to lead us to the discovery of the real genuine key wherewith to

unlock and enlighten us on many of these dreaded, all-devouring infirmities of flesh. The gory knife is not enough to teach or tell us, neither are the numerous local or specific applications likely to add much to the state of our knowledge; our only anchor of hope must alone emanate with the ever plodding, deep thinking, all powerful mind, which will not rest contented until every stone is turned and re-turned, every collateral path of medicine fairly exhausted, and thus in time the foe be compelled to surrender his unjustly obtained citadel into the hands of the faithful and persevering practitioner. To get at the root and origin of disease, we partly, also, must get at the root, origin, and growth of vitality. What have these remarks, the reader may ask, to do with the subject of vitality? They have this to do with it, that while there are thousands now engaged in the practice of medicine, not one in a hundred allow their composure to be disturbed in the face of so many incurable cases, nor will they budge out of the one beaten track, or allow themselves the latitude or liberty of looking for a fresh idea, so terrified are they of losing—what? a reputation of being slaves and faithful followers of other people's works and thoughts! I am glad to observe in No. 7 of Vol. 2 of *The New South Wales Medical Gazette*, that one practitioner of Sydney is not belonging to this type or school, since he has honestly and fearlessly given his ideas to the world on the absolute fallacy that is to be placed on the method of treatment adopted in the cure of tetanus. The profession are even still more indebted to him for the outspoken, candid way in which he has, in the same journal, reported the history of the interesting "*Case of Carcinoma of Mamma, treated with Condurango*," one of the many popular remedies recently introduced as a cure for this complaint. Hopeless! incurable! are ominous words when expressed betokening the very imperfections of our art, and ought to act rather as a stimulant to fresh thoughts and new zeal, in place of contentedly sitting down and saying, "Thus far, and no farther, can I go"—licensed, seemingly, as if for no other purpose but merely to practise dogmas (like religion), in place of being taught the untrammelled use and exercise of an independent mind. In either one or the other, stir out of the beaten track, then one is almost certain to be rashly condemned for daring to exercise his own freedom of judgment or mind, like some of our greatest and most admired reformers. Afraid to stake a reputation, because the barren-minded dogmatist, bewildered with his own narrow crotchets, and, probably, too, in order to raise himself in popular estimation, has to sacrifice the plodding mind of others by circumscribing their action to the use of a few often less than worthless agents, and yet we find in medicine, as in healthy genuine states of religion, new and fresh improvements—life, thought, and sects springing up around us every day, and that because we will not allow ourselves to move onward—seeking rather to gloat over and become would-be considered refined translators of the past, but careless to interpret anything advantageous for ourselves at present, or

for the benefit of the future. Could a profession have been more grossly villified, more dishonourably stigmatised, or more dastardly mutilated and degraded, than to say that the recovery of a patient, suffering from "typhoid fever," was wholly and solely attributable to the aid of "*priesthood, thanksgiving, and miracle?*" Let every medical school on earth perish rather than that such an outrageous and impertinent piece of insult on so noble and honourable a profession should go forth to the world unchallenged. If such a miracle was wrought through the sole aid of the priesthood, or theology, then why, in the name of honesty, truth, sense, and justice, was the honour of knighthood so falsely conferred on the three faithful, sterling-minded medical attendants, where millions of eager and anxious loyal eyes were, night and day, constantly watching over and scrutinizing their bulletins and their actions, skill, &c., while anxiously engaged in the performance of their most solemn and sacred duties? Why? Yes, why? And if the priesthood were really the sole and instrumental cause of restoring the royal patient to health, and the accomplishment of this so-called miracle, then why was the titled honour withheld from them, in place of bestowing it on a few members so seemingly undeserving as those of the medical profession? By all means let us, in sincerity, bow the knee to God's omnipotence, but away with such timbrel-sounding superstition, witchcraft, and neeromane. Perish such an iniquitous kind of religion, and such an equally absurd and ridiculous medical science as this. If such arrant delusions as these are to be tolerated, then good-bye to medicine, and let us at once hand over all science and all laws to the command and control of the pulpit. After this it may well be said, that "spiritualism" is abroad amongst us, and, in place of dwelling in the heavens, (as we have been taught to believe), the earth has now surely, become the only temple and habitation of the Lord? If we are not yet able to fathom many of the mysterious and subtle movements of disease, we have at least proof, seemingly, that we now know something more of the use and value of theology, intercessions, and other strange principles, which guide the migration of spirits to and fro between the celestial and terrestrial worlds. Throw physic to the dogs, if such bastard ethics, metaphysics, theology, divinity, and philosophy, is to be permitted to usurp the legitimate functions of physical science, therapeutics, and medicine. Away with such absurd titles, as F.R.C.S., M.D., M.B., M.R.C.S., &c., if such defiant imputations or innuendos are to be hurled at the head of a profession claiming some of the greatest and brightest intellects of the age. Through the lapse of centuries no science has been cultivated with such unflagging devotion, and none, I am sure, by greater minds, than that of medicine. Many of the greatest men that have ever lived, have been numbered in the ranks of the medical profession, and many valuable discoveries and inventions of modern times have emanated, too, from their zealous and most unwearied labours in the cause of science and the common interest and happiness of mankind. Shame, shame,

therefore, that the pulpit or priesthood should contrive to rob it of the fruits of an arduous, toilsome avocation, or its just and well-merited laurels. Long may the Prince of Wales live and reign in the midst of millions of well-wishing, loyal-hearted subjects, as a "*monument*" far more to be cherished, admired, and adored, in the annals and progress of medicine, than the mere distribution of a few honorary titles.

But let us proceed to deal with the matter more immediately connected with the nature of our subject,

The physical basis of life, it is said, arises alike in the animal and vegetable kingdoms from the same unity of cause or causes, viz., Protoplasm, varying possibly only in some minor degree, and which may, too, probably, in some considerable yet rather obscure manner, be modified, affected, or accelerated by a vast multitude of outwardly or inwardly actively acting, exciting, collateral sources. Amongst these we may cite the more prominent—heat, cold, climate, &c., but chiefly, I imagine, from the proteine or protoplasm kind of food used and consumed by animals, or what is, perhaps, better and more familiarly known to us under the name of the albumenoids, such as the white of an egg, which is the richest by far of all kinds. Admitting this to be not at all an unlikely supposition or hypothesis (though it may readily enough, at first sight, seem difficult to create belief) on which to account or explain the first origin or numerous mysterious processes of formation of the chief essential elementary matter of this physical basis of life, viz., protoplasm, then I think we may naturally, also, infer (whether rightly or wrongly I don't presume to say) and even, indeed, attempt to explain the various intricate, approximate modifications and degrees of vitality so predominantly characteristic in nature, and which is so abundantly disseminated in endless forms and shapes throughout the animal and vegetable kingdom, viz., by assigning its primary action to that arising from the regular periodical recurrence and perpetual changes accruing from the vicissitudes of seasons—spring, summer, autumn, and winter. Throughout one or other of these stages or seasons, we find life ever and anon actively striving to force itself into existence and maturity. In winter, nature may seem at rest, but in reality such is not the case, for the death of one plant may be but the vitality of another, the winter plant nourishing the spring, the spring the summer, summer the autumn, and so on. And yet, though arising apparently from opposite causes, there's the one same unity or vitality existing in each and all. From this it is self-evident, that winter is absolutely essential to the preservation and propagation of life as summer, which, of course, decks nature in her finest garments and richest stores of animation. It is well known that many seeds only germinate and mature themselves in certain months, or at special seasons of the year. As a familiar illustration of this fact, we may only mention the case of the crocus, which by nature is destined to luxuriate most during mid-winter or early spring. I could quote many similar instances did I consider it

neecessary to convey to the mind of the reader any clear idea of the thread of my comments. Life does not belong to any particular season, but is distributed evenly amongst all, no doubt for wise designs and good purposes. Possibly, if we had no winter, so it might naturally, also, affect the summer. The one is as beneficial as the other in carrying out the wonderful designs of the Creator. All things, seemingly, must spring from one rudimentary type in order that the whole may exist in one perfect unity and nature. Blot out the winter, and do we not also blot out, or in a measure impair the summer and the others, and their numerous variegated tribes and families depending on them, and awaiting only in a state of lethargy to burst forth again into life at their proper time and season.

So nature continues—one is to all, and all is to one, the same unity of cause blended for separate, yet conjoint use, in the ever unerring and revolving eyele of nature and her wisely ordained laws, all the nevertheless true though we cannot really fathom or comprehend the nature of the abstruse yet symmetrical action or vitality.

There must be winter plants as well as summer, and autumn seeds as spring, to complete the regular action of the great laboratory of nature ; all must harmonise one with another, though fickle-minded man is fond to believe that there's only one life, and that life must exist only at the one season, viz., summer, when the tide of vitality is at its greatest, and the time man generally most satiates his morbid appetite. Not that God made him simply that he might consume the fruits of the earth, but rather that he should, during this period, acquire sufficient strength in order to enable the system to endure other hardships (as in winter), while other seasons and plants are in the act of their revolution, so that the various families of animated nature may also have a fair share of food, life, and enjoyment. In fact, the laws were not made for man, but man was made and adapted in just conformity with laws, transgressions of these laws, of course, it is natural to suppose, only result in many of the numerous ills which flesh is heir to—a penalty, in short, for our disobedience.

The prevalent notion with many is, that there is only one season of vitality, and that is summer ; the rest they suppose are either all asleep, or else non-productive. Did man control the seasons, as he does the government or management of the people, I am quite sure the regular order of nature would very soon be higgledy-piggledy, or turned topsy-turvy, or into one season only, viz., that of keeping in office. This is the only way some have of acquiring and maintaining their vitality, living like a certain class or species of vegetation, which prey on and suck the elaborate sap obtained from other plants or animals. Deprive them of this, a secondary, for it is not an independent, nature, and they very soon perish through their inability to provide for themselves. It is with man, as it is in the vegetable and animal kingdom, we find numerous specimens of ereepers or suckers, as well as free, independent self-supporters. A pure life, and a half or mid-way life, careless of whom or what they devour so long as they

can clutch hold of anything with their insatiable, covetous fangs, and there they will cling till either they drop, or the original plant should die from under them. The latter class are termed "*parasites*," yet parasites, you observe, live, and of course must obtain their vitality somewhere. We may go a step further, and say, that the parasite has its parasitic parasite downward, unless argument is lost, or the vitality transmitted into some other kind of living substance or creature.

In summer, heat, of course, is greatly accelerated and increased; the producing power, therefore, of the animal and vegetable at this particular period must naturally also be augmented, and that in an inverse ratio to the degree in which they are subjected to this extra stimulation, not exactly through the agency of the mere heat or caloric alone, as, probably, by the indirect or superfluous heat acting on the contractility or expansion of these very innumerable molecules of life contained and freely circulated in abundance throughout every part and texture of its substance. We find extreme heat has the remarkable, if not general tendency, either to alter, destroy, or cause the appetite of animals to undergo peculiar and frequent changes. In vegetables, again, it causes a driedness or shrivelling up of their substance, and, in exceedingly dry weather, they either become dwarfish, or else run to premature maturity or seed. By this means the cereal, or grain-producing crops, are preserved for the use and support of man during the time when the plant is out of season.

Some more than others, of course, have a greater tendency to run to seed, and the period of their maturity varies with the degree of heat and other circumstances. This wise provision and process of heat and light explains, to a certain extent, the various modes of action and reaction in vitality. In other words, it operates seemingly all to the one end or tendency, viz., that of ripening, concentrating, or bringing to maturity these very molecules or protoplasms, thereby giving reproduction in vegetables to seeds of innumerable species possessed of active, or non-active vitality; also dense agglomerations of the same, as witnessed in the roe or spawn of fishes, the composition of grain, as wheat, oats, corn, barley, &c., &c., which, when planted under favourable situations, influences, circumstances and seasons again burst forth under a repetition of the same similarly inherited, acting qualities, laws, and vitality—an endless law, in fact, kept in perpetual motion by the regular rotation of the seasons (even admitting that the one season only matures, while the other preserves), thus vitality is made to harmonise, and all alike participate in the full benefits of the earth at its own particular season of germination and growth, whether it be in summer, autumn, winter, or spring. The same may be said of the egg as of wheat, &c., the shell is merely to the one what the husk represents in the other, viz., a protective covering to its vitality against foreign influences. Clothing, again, may be taken as much to represent the one as the fur of animals is the other.

In man or animals it may, too, on this perhaps rather vague hypothesis, explain, to a certain extent, the reason of loss or variation in appetite. Either that these protoplasms are so swelled and increased in size or number, or else redundantly secreted and then circulated throughout the system, thereby rendering a further supply unnecessary to an already overcharged or multiplied condition of the molecular corpuscle system or protoplasm making or repairing function of the animal or vegetable economy. On the same (it may be a rather eccentric) principle, the superabundance or existence of these protoplasms may be assigned as one reason of growth, or the power of fattening, which occurs of course always most vigorously in summer, when every element is then in greatest abundance, and most active vitality. In summer, from this assumption, it stands to reason that the blood must inherit more vitality, seeing that it is now surcharged either with a superabundance of number, or else in size, attributable, perhaps, a little to both, for lassitude in summer is often far greater (comparatively speaking, compared with surrounding circumstances,) than at other times, not probably owing to the want of protoplasm, but in a great measure, perhaps, owing to their absence, extra size, or the want of a regular constant supply to keep the system at par, arising, as previously alluded to, through the loss or the precarious nature of the appetite in consequence of the richness or poverty of the nutrition consumed. This shews the reason why man in summer, while these protoplasms are most abundant, should use a vegetable in preference to an animal diet. In winter, again, it is quite the reverse, because, as I have previously said, the protoplasms are not only less numerous, but also, probably, smaller in size, thus, owing to the greater waste of caloric, an extra consumption is needed, otherwise a change to heat-producing kinds of food, as the saccharine and oleaginous, &c. Besides, in winter, vegetables, according to this theory, would naturally contain a less amount of protoplasm in their shrivelled-up, arrested growth, and more condensed state of their composition.

In Australia, during times of severe drought, this is particularly observable, as sheep and cattle (all stock, in fact,) fall away very much in condition, owing to this very cause. Animals killed when suffering from inanition, and below a healthy par (this very vitality that I speak of), cannot be considered eligible for the maintenance of health or strength, lacking the very ingredients in their own stinted composition, and, therefore, they cannot convey more vitality than they really possess. Again, animals that are slaughtered for food, more especially if any way heated or over-excited at the time of slaughtering, must, naturally, tend to increase the state of these very protoplasms, or corpuscles, the result is, they don't bleed so freely, and then the meat afterwards tends to more rapid decay and decomposition than if it had been slaughtered when the animal was undisturbed and in a state of absolute quietness. The same rule holds good with the food

of animals killed when in any way diseased, or deteriorated in health, (such as from foot-rot, &c.). Meat when consumed in this condition must naturally, also, be less nutritious, more liable to engender disease and bad health, and less likely to keep, or be preserved for any length of time. Animals slaughtered when in condition, sound, and healthy, contain these protoplasms in the normal state (in disease they are abnormal), and, therefore, the food not only keeps better, but it is also more sweet and wholesome. *Preserved meat*, at least in the present way in which it is prepared by boiling and hermetically sealed in tins, never can be fit or wholesome food for man. It may tend to fill up a vacuum in an empty stomach, but I maintain that it will never keep the body in health, or become an article of food of general consumption. The very process of its preparation at once destroys its nutriment and essential vitality; and, thus, to live on it for any length of time, must tend to diminish strength, deteriorate health, and thereby engender disease; at least prepare the system more rapidly (by sinking it below par), for the reception and attacks of all manner of disorders. There cannot be any doubt of it in my mind, and should it succeed as a commercial speculation, time alone will divulge plenty of practical instances of its baneful effects, when it is consumed as a general article of diet. It is absurd and unnatural to suppose that it can possess the whole properties and virtues of meat recently killed. We may just as well say that "butter" is milk, or that "*casein*" or cheese is milk, as say that *Preserved Meat* is either food or flesh. Man cannot live alone on *butter* or *casein*, extracts from milk; neither is it feasible to suppose that *Preserved Meat* will ever act as a substitute for genuine butcher meat in its strict integrity. If preserved meat is to take the place of butcher's meat in our hospitals, asylums, poor-houses, etc., then, I say, it will have the effect of increasing mortality and disease ten thousand times more amongst the poor, in place of ameliorating the state of their already great poverty, and abject miserable condition. It will (like too many other articles of refined food—arrow-root, maizena, corn-flower, &c., and even flour itself), tend most materially to lower the type and standard of health, and the deterioration of the human race, by causing or forcing men to live on artificial substances in place of following the unerring hygienic laws of nature. The arrival of the last English mail brought us the startling news that no less than two thousand cases of our Australian preserved meat were condemned owing to their decomposition and putridity. Let me ask any rational person what effect this meat would have had on the inmates of our asylums if it had only escaped the notice of the Inspectors? Would it not have engendered a plague that would have cost more, probably, to eradicate, than if they had spent the money, in the first instance, in buying real butcher meat, in place of speculating (on false principles of economy) on cheap, putrid trash. I shall insert an extract from a letter, taken from the *Melbourne Age*, on the subject, written by an English clergyman:—"I purchased lately, a 4lb. tin of Australian

“beef, and had some eoked. It was perfectly sweet, but dry and hard, and broke up into flakes similar to chips such as an adze cuts off a piece of timber. It cost me 7d. per lb., and I have ordered it, except what was cooked in a curry, to be given away. I would not eat it if I got it for nothing. The meat seems to be too hastily cooked, and hardened instead of being softened by the process. Unless some improvement be made in the mode of cooking or preserving it the meat will never take with English people. I have met persons who have tried it with the same result.”

Here is a proof of the inutility of the meat. Its strength is either all extracted in the crude process of preparation, or else completely destroyed in the boiling, leaving nothing but a dry, hard mass of fibrin or sarcolemma. What folly to call this preserved meat. Just as well call butter, or casein, or cheese, preserved milk. In these latter articles, they merely represent certain extracted properties, but not the whole or real milk: for, in the process, the whey, butter, milk, acids, sugar, and a large part of the oil and water is gone. So, too, in preserved meat, its very essence and essential principles as an article of food are destroyed, otherwise extracted, leaving little or nothing but the dry fibre or sarcolemma, impudently styled meat! and sold at 7d. per lb. Say nothing about the destruction, in this process, of the nitrogenous principles, albuminous constituents, the chlorides, and other various salts of the meat, and lastly, the destruction, also, of these very protoplasms and their oxygen; for now they are all burst, and their contents heterogeneously blended, transfused, or wasted, like the oily globules separated from milk in the process of churning. What medical man, with any pretensions to a knowledge of chemistry, can call meat preserved in this way a fit article of nutriment, either for the healthy, the invalid, or the convalescent, when nearly every element of nourishment is either destroyed or extracted from its composition? Such food, no matter how prepared, I believe will never promote healthy vitality or keep man's strength above par; and thus, I can perceive increased types of constitutional debility ensuing, and, as a natural consequence, an increased consumption, also, of intoxicating liquors, to keep up the flagging energies (or, rather, I should say, more correctly, starved), of nature and life. God forbid that I should have written a wrong word, but in these remarks, whether they are palatable or unpalatable to the many or the few, I am bound by my conscience to put my views of the matter before a discerning and criticising (yet oft fastidious in their notions) public, for what they are worth. It may seem harsh to deprive some of a living, but from a physiological, hygienic point of view, I fear not to offer my sentiments on the subject to the righteous and rigid inspection of the world, in hopes that if it does evil, it may do a thousand times more good, and stir men's minds to think and reflect on these important matters, in place of swallowing things that may be not only running them insidiously, but headlong, into destruction and death.

Again the insipidity of colonial beef and mutton is proverbial; if it received this distinction before it is cooked or boiled, what must not the flavour be after it has undergone the boiling down or preserving process, when nearly every particle or essential element of its substance, flavour, or osmazone (it is in a great measure owing to this agent that the virtue and vitality of good meat, like tea, chiefly depends) is neutralised or destroyed. It seems a matter rather incredible to think that rational men could be found to partake of such stuff under the belief that they are really consuming meat or the essence of meat, far less inheriting any of the qualities or virtues of genuine beef or mutton. Talk of educating the people, it will take a good deal, I imagine, to convince some of their errors, or the many the true nature of some of these epicurean fancies and fashions, when they are scarcely able now, apparently, to distinguish the difference between genuine and artificial food, the good from bad, insipid pine chips from solid, healthy beef and mutton, or wholesome and nutritious food from unwholesome. And yet, people now-a-days expect, seemingly, to enjoy robust sound health, and live to the age of Parr or Methuselah, while partaking of some of these worthless, imaginary essences of food; often preferring spurious, artificial compounds to the genuine article itself, retailed at the extravagant price of 7d. per lb., when the clergyman's written statement, previously alluded to, informs us that he would not take it as a gift.

Is it not the same with hundreds of other things, and millions of gallons of spurious, adulterated liquors, annually poured down the throats of innocent and ignorant people, under the vague and infamous belief that it is really the veritable bona-fide juice of the grape or vine? swallowing wholesale such filthy, abominable stuff, deluding themselves with the false hope, that it might have the salutary effect of increasing their declining strength and improving their debilitated constitutions, when it more frequently happens to have a contrary effect of positively hastening their dissolution, or sapping and gradually undermining the little remaining strength or vitality which is barely able to keep soul and body together. Is it not the same with many other common articles of daily use and consumption that I could mention? Yet the gullibility of mankind (with all his education and knowledge) is so great that many become like the dog carrying the beef in its mouth through the water, "they will sooner often snatch at a shadow than cling to the real substance itself,"—they prefer a pound of cheap rubbish to an ounce of genuine material. Talk of the art of mesmerism, we need not practice any such wild delusive absurdity, for I am quite certain it would be no difficulty to find abundance of illustrations occurring before our eyes every day, to prove its already too general existence, since people now-a-days are actually becoming so easily charmed, or mesmerised, that they are just as contented and pleased with a wooden nutmeg as a genuine one. What's the odds, then, some say, whether they prefer bullock's blood and sawdust, preserved meat, giblets, or sirloin, so long as they are happy and

satisfied. So the world wags ; and this is the way vitality and conviviality of the human family is fostered, nourished, fed, tended and eared for. Yet while all this, and hundreds of other things are going on, and thousands are being deprived of a sufficient amount of wholesome food essential to the natural support and maintenance and waste of proper health and vitality, a few wise-a-ers again are moving in an opposite, charitable enough direction, who seem to think that people now-a-days are beginning to ruin their pocket, health, and constitution imbibing so much of this filthy alcoholic liquor, whereas in fact, were it not for the use of a little of this vile spurious agent occasionally used, many, in all probability, would very soon find themselves transformed into wholesome enough food a few feet below the ground for the support of another yet lower class of living and less fastidious creatures. Were there less consumption of bad food there would also be less need for consumption of alcohol. One base abnormal appetite generally fosters another, so that to begin to suppress drunkenness we must begin by suppressing the circulation of nothing but sound wholesome food. Without the right stamina of vitality continued in the victuals we consume, the difference must be made up by resorting to the use of stimulants in some shape or other. It is evident then that one evil is only the hot-bed of another. To cure one we must cure all, where this is impossible better let well alone, for to apply unnatural restraint in one way, only compels it to again break out in another and perhaps worse direction. Drunkenness is, no doubt, a great social evil ; so is the circulation of so many sophisticated articles of food of common use and necessary for the support of life.

It is hard to be poisoned, but it's equally as hard to be starved in the midst of wealth and plenty, in order that a few unfeeling, worthless wretches may be permitted to realise a rapid fortune and then retire. Of all crimes food adulterations should, in my opinion, be punished the most unmercifully and vehemently. The public never can be sufficiently protected against these vile impositions until analytical sanitary inspectors are appointed in every community to watch and guard over the lives and health of the people. 'Tis a grievance by far too common and universal, and sad to think that law is painfully too powerless in these matters, if it don't even at times wink at the perpetration of such heinous offences. Let the composition of every article (solid or liquid) offered as fit for human food, be registered, as a guarantee of good faith. No department in the world, I believe, stands more in need of rigid inspection and regular supervision than that of our food market. Penalties should be prohibitory instead of nominal. The rapidly increasing rate of mortality within the last few years is surely enough to attract attention to some of the causes of these grave matters. Only think of infantile mortality reaching as high as 50 per cent. !

Under such a saddening picture can we look for a better cause than to the use of so much artificial food. No wonder that the pre-

vailing type of infantile vitality should begin to assume characters in keeping with the abused laws of hygiene and food reform. The facts are too palpable to be doubted to any one who will give themselves the trouble to look into the Registrar-General's most carefully and usefully compiled statistical returns of health. We don't want Permissive Bills, we require sound, sterling measures, the appointment of firm, intelligent supervisors to watch over the sale of such necessary articles of daily consumption, in the shape of food and drink; then man's vitality, activity, energy, industry, and intellect, might have a fair chance of acquiring new vigour and resuscitation in place of too often sinking into an untimely premature grave. Reader, weigh these few facts solemnly and attentively, as they are not written in the language of a half sneer, but indicted in a true, faithful, honest spirit, sincerely trusting that they may, in some way or other, prove conducive to the happiness and well-being of over-burdened, deluded fellow creatures. The aspect of the present age is sadly changing in many things, I fear for the worse, and none more so I fancy than in the status of health. Vitality is becoming so split up and subdivided into frail fragments, through food refinement, that by-and-by it will require ten men to do the work of one.

Following up the thread of our argument a little closer, and don't we even already discern ample traces of the effect of this fatal system of the subdivision of food becoming more and more transparent every day, and in every department and walk in life. In place of God-like images, huge herculean independent men, do we not see a far different type or class of manhood springing up, degenerate, half starved, short-lived, anæmic and sickly, in the midst of abundance and plenty? One man teaches Greek, another Latin; one teaches music, another singing, another drawing, another dancing and etiquette, another writing, another arithmetic, another poetry, algebra, mathematics or elocution, until education and mental development is becoming the prototype of our sophisticated and obnoxious refinement of bodily nourishment. All the vital or material particles of the substance are withdrawn, and nothing left only a bare name and shadow for the nourishment and support of mind, body, and soul. And all this wholesale destruction of life and health to keep up a fantastic, spurious, covetous, spirit of selfishness and commercial speculation, forced by uncongenial, adventuresome bubbles of enterprise, in place of honestly striving to unburden the hidden innumerable treasures of the earth, sufficient in their own simple naked purity to support man in comfort, health, and happiness, without seeking to redress or dilute them to the injury of many, and detrimental to the wealth of the nation. Nor is this all, for while it takes nine men to make and finish a pin, so too on this scale of progression it will soon next seemingly require nine men also to train, educate, and instruct and feed another before he can be turned out perfect into the world to fight his own way in the endless struggles and battles of life. Dwarfing and cramping of intellectual power or vitality is becoming quite as

transparent as in almost every other department or occupation of life, bound down to the one solitary thought or act, the pointing of needles, or perhaps the heading of pins, making life as it were self-supporting by one faculty or function alone, leaving general life a perfect blank, all a dark mystery playing with this one little single toy year after year in some little obscure out-of-the-way corner of this mighty sublime creation, &c., &c. But let us return to the thread of our subject at the place where we left off, viz., meat preserving. How, let me ask, can our Colonial beef and mutton be anything else but insipid, juiceless and flavorless, when the same invariable grass (too truly now degenerating into a species more resembling dried reeds or bamboos than former succulent nutritious herbage) for upwards of fifty years has been constantly eaten down by stock (called by a leading authority heterogeneous, or mongrels, or hybrids) without even the slightest variation, rest, reparation, or assistance whatever? It would puzzle any botanist to find out the exact nomenclature and species of this grass. I don't pretend to be a correct judge, but I think it would not be improperly termed the *everlasting grass*, since it has now summer and winter, and through all kinds of seasons, drought, snow, rain, flood, been in existence in this colony for upwards of fifty years as the sole and only food for every beast in creation, from the scrubbing horse, the hybrid bullock, down to the pig and bandicoot rat, and no soothsayer is foolhardy enough to say when it began or when it is likely to die out, since probably it began as far back as Adam's time, and will now possibly continue to the end and destruction of the world. As the all-destroying Comet approaches us by the 12th of August, it might tell us something more about it, we must wait patiently till then. To repeat, the same grass on which our stock fed fifty years ago continues to feed them still. Can any intelligent person believe that this perpetual system of grazing carried on during this long period and over the same land, has not only materially injured the nature of the grass and the herbage, but also the quality of our stock, the prosperity of the colony, and the very flavor, strength, and vitality of our beef and mutton? No! No one but a fool, I should think, would ever attempt to deny it. How can this system of grazing affect the grass? It is very easily explained, and in this way; by its preventing the plant according to the ordinary law of nature, from coming to perfection, maturity, and seed, for it must be through the latter alone that healthy vegetation can ever be promoted. But, no; every fresh blade of grass as soon almost as it shows its face on the surface of the ground is again eaten down by stock, leaving nothing but dry roots, which in this process again sends forth nothing but a dry, useless class of grass, which pervades the whole colony from one end to the other! Who is amenable for the propagation of all this evil! Why, nobody, but our Colonial Government and their bad defective laws, to tolerate the existence or continuance of such grave and irreparable mischief to be done to our extensive tract of vast fertile lands or public domain.

The time will come when the public will not only see but even feel the injury of such bad legislation. Even now squatters begin to cry out that their runs are over-run with grass seed and other rubbish, and not fit for grazing purposes, sheep, wool, and stock, as it was thirty years ago. No! I perfectly believe them. But, then again, whose fault is it, only the Government and themselves, and this perpetual system of grazing, cheap land, and farthing grass. 'Tis monstrous to contemplate the evils that will yet arise from such a despicable law. Floods and droughts are bad enough, but perpetually robbing the land and grass may yet, at no remote a date, be found ten times worse. Thus, in every sense of the word, it is lowering the vitality of these animals, and as a natural consequence, all other animals also who have to consume and live on their bodies, furnished to us in the shape of food. If the fountain be polluted, or the root of vitality defective or impaired, viz., *grass*, 'tis folly then to think that man can inherit that vitality which he refuses to bestow upon the land or the dumb animals on which he has to rely for his sole and whole support, dependence, and existence.

It shows clearly again that there is *but one and only one kind of link in this great endless chain of vitality*. That one is made for all, and all for one! All acting in harmony and reciprocally living for each and each others' good, no matter whether fish, flesh, fowl, or grass or vegetation. Destroy one link and you derange, impair, if not destroy, the whole.

If the law, then, will permit men, year after year, to occupy large tracts of country for the mere purpose of grazing sheep and cattle, without expending one single cent. in the way of improving the food of such stock, the natural and inevitable consequence must be that the vital progress, prosperity, and commercial chain of the colony must be weakened, injured, and deteriorated. What a fabulous-looking thing it is to say that millions of acres of the richest and finest land in the world is let for such a purpose, and to a class of men, at the ridiculously low annual rent of only "one farthing" per acre! Could any law be conceived more preposterous or effectual for sapping the vitality and welfare of the colony than this? Future historians may well look back on our present folly and ignorance with disgust. Our lifeless crude laws are enough to make us blush from the eyebrows down to the toe-nails, were it not that our blanched etiolated blood has not as much colouring material within it to set the action of shame in motion. Our blood is like our ill-fed, half-starved beef and mutton which we consume—it inherits no strength, no body or lasting vigour, nothing but sickly lifeless vitality, the fruits of our own indifference, ignorance, and idleness. To say that men are by law allowed to use and occupy millions of acres of the most fertile land, merely to feed sheep and cattle, at the fabulous annual rent of only "*one farthing*" per acre. Is such a thing not a glaring outrageous disgrace on our freedom, intelligence, independence, and the prosperity of our colony? And yet, while our

aristocracy are getting the infinite use of this cheap land and grass, our poor, struggling, free-selectors (a borrowed word, I presume, taken from free-grass) or would-be called farmers or yeomanry, are charged at the extravagant rate of one pound per acre (reader, remember, for the very same land which the squatter has for *one farthing*), and, before he can settle on the land, he must first pay a deposit of five shillings per acre, and five per cent. interest on the balance, paying, you perceive, in cash alone, 240 times more money for the land than the rich aristocratic squatter, who can occupy as much land as he likes for his thousands of sheep and cattle, at the small annual worthless price of only "*one farthing*" per acre. After laws of this sort, who will have the audacity to call Australia the happy home for a poor man or a struggling family, to give the rich the benefit of the land at only one farthing per acre, while the poor man is compelled to pay his five shillings per acre in advance, and, even at this extravagant rate, often, then, cannot even get it without undergoing an endless amount of trouble, expense, delay, and bother, with officials and the big mammoth squatter, or cheap grass men—a class of bushmen worse than tyrants, despots, or semi-gods, who take good care to live on milk and honey—the richness and fat of the land. It makes one galled to the quick to think, far less write, on the conduct of such men, calling themselves Christians, that a fellow brother should bow the knee to beg leave of them to sweat and toil, or even starve, in the midst of a mere handful of population, to such immense unoccupied tracts of virgin, fertile soil, fit to maintain millions of beings in happiness, in place of our few thousands, in almost idleness and a state of semi-starvation and barbarism. As I said before, the free-selector has to pay a deposit of five shillings per acre, while the squatter occupies the same land at only *one farthing* per acre. Reckoning the price of land at one pound per acre, the selector, you perceive, has then to pay 960 times more for the value of the land than the squatter. In other words, it is equivalent, at a farthing per acre, to giving the squatter the use of the land for 960 years, or, we may justly say, eighteen generations, before the public can realise the one pound per acre which the free-selector has to pay, say nothing about interest. The miner's situation, again, is even worse still, for he is charged for leaseholds, at the rate of £2 per acre, so that land held by the squatter, at one farthing per acre, will take 1920 years before the Crown can realise £2, or what the miner has to pay as annual rental per acre, and 10s. a-year besides for a Miner's Right. Who can foresee or estimate the real amount of good, and the many invaluable services rendered and bequeathed to posterity by our industrious miners? Sinking endless numbers of deep shafts, some hundreds of feet in depth, capable of storing or conserving millions of tons of water in the bowels of the earth. In an arid, dry country, water is the one grand desiderata to settlement and prosperity, and yet these very miners, in order to do this and live, have been charged the exorbitant fee of 30s. per month, merely to follow the

precarious operation of digging for gold, and providing this very water as a contingency (an element in the colony at times oft more valuable than gold), and where permanent water, too, was, perhaps, never known to exist before. Talk of sinking public wells on our high roads, and throughout the interior, in fact, these very miners should rather be receiving each a bonus of 10s. a year from the State, in place of paying it away as a poll-tax on honest labour and valuable services, to keep up rotten corrupt governments. In short, it is asserted that one individual alone occupies, on the Lachlan, upwards of one million and a quarter acres of Crown Lands, at an annual rental of a little over one thousand (£1000) pounds, being at the rate of a fraction of a penny per acre! What does the reader think of this scope of country for a cattle run for such a paltry rent? And this is only one of hundreds of other cases, where 5, 10, 20, 25 square miles of Crown Lands are leased in large areas throughout the Colony, and which are assessed at not a whit higher rate of rent than in the above case. If squatting or sheep farming won't pay at the fabulous and ridiculously low rate of rent, viz., a fraction of a penny per acre, how, in the name of God, can it be expected that the free selector or farmer, who pays five shillings per acre, and the miner £2, can ever expect to live and support a family? At this rate, is the comparison between squatting, and farming, and mining, not most odious, and shamefully disgraceful? England, with all her mighty strides of civilization, cannot produce laws to equal or surpass the generous (to extreme) land laws of New South Wales. No wonder that our public finances are deranged. No wonder that the colony is yearly gliding deeper into debt. No wonder that the healthy stream of immigration has ceased to flow. No wonder trade is stagnant, and the prosperity and vitality of the Colony is on the wane, when the revenue from the back bone of our wealth, viz., our waste lands, is retrograding and yearly diminishing. No wonder the colony is already over-run and overwhelmed with asylums, distress, and poverty, in the very midst of inexhaustible stores of wealth, abundance, and plenty. Land! land! the great keeper, the vast store-room and dispenser of all vitality—the heritage of man, is here, as elsewhere, fast becoming locked up in the hands of a few. Let "thanksgiving" be given for this state of affairs, ye who worship God and mammon with filthy lips, false hearts, yearning bowels, and full vials (pockets). What kind of colonial vitality do you call this? Hark! Is the future not already beginning to groan under the influence of such gross, scandalous, painful, iniquity? Heaven forbid that I should, in these few remarks, offer to write one single word on this subject short of the truth, but I dare, nay, indeed, I fearlessly challenge, contradiction.

Ye gods of Exchange Alley, can you shew anything to equal our Land Laws for "monstrosity," in all your most nefarious transactions? Or, ought not the Colonial Land Act of 1861 rather to have been called the *great Swindling Act of New South Wales?* or worse than another South Sea Bubble?

It would have sounded more natural had Mr. Anthony Trollope aimed his hard and undeserved knocks at our giant cheap grass squatters, in place of a few poor, helpless, industrious farmers, who have had to struggle against many adversities in the shape of droughts, floods, rust, dear land and flour, no markets for the sale of produce, &c., little known to Mr. Trollope, his bird's-eye-view peregrinations, and his almighty philosophy. Shame, that a man of his mental capacity and calibre should strike the defenceless, the weak, and lowly. He would do better to stick to his fiction, and let facts and history alone ; then his uncharitable, uncalled for remarks will not run the chance of stinking in the nostrils of posterity, like the man who said the climate and the colony would never produce a grain of wheat. Now, we have had millions of bushels, and, no doubt, tens of thousands of millions of bushels will yet follow. I am now, and ever have been, an irrefragable disbeliever in novel-reading, and another of the few who are not ashamed to retaliate and tell Mr. Trollope boldly to his teeth that the task of shielding the upright and defenceless is more honorable than stalking the lion or dying a hero on the barren unimpregnated plains of literary romance.

But the pendulum of public opinion now swings to and fro on the pivot of "*miracle and thanksgiving*,"—thanksgiving for disease, for living and dead bishops, for men heroes and semi-gods, for New Guinea expeditions, &c. ; but where's the thanksgiving for multitudes of God's indigent and impoverished tax-bearing creatures ? What will thanksgiving be for next, I wonder ? I presume, more cheap grass and land theft, villainy, gold mining swindling cases, mock legislation, and mock governments, or who can the most easily and rapidly deprive the multitude of their bread and vitality, sinking the colonies the deepest into debt, ten and twelve millions of money, taxing people, as Sydney Smith says, from the cradle to the grave—taxing to give us life, and taxing to put us to death, and, heaven knows what else of the Calvinistic pains and penalties of this nether physical world. This is a plain sample of the legislation and advancement of New South Wales. No sensible person would scarcely credit it, and yet the facts are as palpable as the sun at noon-day. Reader, don't take my words for it, but make the simple calculation for yourselves, and I have no doubt that you will then see the truthfulness of my assertions at a glance. A more liberal or generous law defies its equal or comparison on the face of the whole globe. Need I ask what kind of vitality is it that New South Wales possesses, after such stubborn facts as these ? Or, is the chain of our existence not woefully impaired and radically defective at its very fountain ? As I proceed with my subject, the patient reader will do well to ponder over and digest these hard facts, and see if he is any better able to assimilate them, to make a healthy, strong, thriving nation of industrious happy people, than a healthy sound body and constitution can be made on preserved meat, or what is, or would be styled, the essence of food, blood, life, and vitality. This is no chimerical or imaginary picture of our hob-lob-sided colonial vitality—fattening

to plethora with wealth the few, to the ruin and sacrifice of the many. I don't believe in the Huxley or Darwin doctrine, about man having originally sprung from a donkey or a monkey; but that man may yet become transmuted (if these things are to continue) into something not at all in some shape rather resembling either of these animals, is a thing, apparently, under present circumstances, not at all impossible, improbable, or unlikely to happen, before the world becomes much older, if the fiat of the coming comet has not destined us for other and better purposes.

Our laws here are making an aristocracy of its own, different and spurious, if not more covetous, thirsty, and tyrannical than the aristocracy England made or obtained for herself under the social upheavings and influence of the arrow, cutlass, sword, and wholesale spoliation, dating as far back as the dark ages. The expiring gas emanating from one extinct life, may possibly be the essence, vitality, and origin of another; but there is little fear, I imagine, of our colonial Moguls bequeathing, if they can help it, very many rich, charitable, legacies to the future. The majority inherit too much of the parasitic principle and breed about them to do anything even so rash or generous. It will need something else besides the occasional importation of a few head of thorough-bred stock to effect any radical change in this propensity or Colonial idiosyncrasy. We have had beef and grass enough, let us import brains next, to see how such insipid meagre laws and management can be corrected or altered for the good of the many, in place of standing still, or being within the limits, and at the mercy of a few.

But we will now pass along, from the "POLITICAL" to the physical basis of life, the subject that we first started with.

In order, then, to regulate health, whether it be in summer or winter, judicious care is always needed to keep up, if possible, an even, uniform balance of this protoplasm; in winter, preventing a falling below a proper, or, say ordinary normal healthy standard, and, in summer, from increasing to excess or rising too high. Various theories may be put forth, even though crude, to explain the barometer of health in this way. As these protoplasms or corpuscles circulate to and fro inwardly, slow or fast, so, too, they must give rise to some amount of friction, hence the origin, partly, of heat rushing to and fro from the lungs, as the blood is undergoing the process of aeration and oxidation. Cold fluids in summer are refreshing, for the same reason, that they soothe or depress the nerves, which may be regarded as the telegraph wires of the system, numerous interspersed throughout the various muscles, which may be regarded, again, as representing communities or fibres, and their contractile power acting or re-acting again on these very corpuscles, molecules, or protoplasms, which either retard, regulate their progress and production, or else reduce them, like seed in the vegetable, to concentration or size.

This appears, again, a probable approximation, though may be, perhaps, not exactly the true or correct hypothesis, from the want of extreme thirst in cold or in winter, when these protoplasm are either less numerous, or else much more contracted in size. Our winter before last was one characterised by notoriously wet, continued bad weather, and an endless amount of rank, insipid grass, which caused thousands of sheep at the time to succumb from what was termed the worm-disease, found in nearly every internal cavity of sheep in millions. During this winter alluded to, many persons might have remembered the prevalence of thunder and lightning, which occurred almost every other day, a very unusual thing to happen in winter weather; but contrast this remarkable atmospheric phenomenon, or rare incident in winter, with the moist season, the rapid, rank growth of vegetation, and the fattening powers still further generated in animals (so high in condition and fatness almost to bursting) and why, I ask, should all this not go to prove the mutual existence, and regulation of the balance of natural laws, simultaneously existing between the animal and vegetable kingdom and the atmosphere, through this very solitary coincidence or fact—viz., arising through the existence, the abundant supply, or want, of this very physical basis of life, or protoplasm? The deficient nourishment, quality of food whether animal or vegetable, depends entirely then, seemingly, on this sole cause, viz., the protoplasm, as illustrated more definitely by the effects of severe droughts, producing lean stock, dwarfish plants and seeds, and rapid premature maturity. For this same reason, varies the feeling of temperature of the body in summer or winter, heat or cold, showing the utility of clothing to preserve too great a waste, or sudden contraction of the basis of life; the necessity, also, of the supply of food being greater in winter than summer, particularly in animals that are much exposed to inclement weather, or over-worked. A regular supply must be furnished, to keep the balance of vitality from falling below par, else disease, destruction, and dissolution, will be the inevitable consequence—as more fully exemplified by the prevalence of disease in the human family during certain seasons, but particularly winter, severe inclement weather, and while there is a dearth, scarcity, or defect, in the quality of nourishment. Animals live through winter, it is true, but to accomplish this, they, of necessity, must consume more food; whereas vegetables (or a majority) in winter either perish, scatter their seed on the ground, or else it is collected, garnered, and preserved (as in the case with our cereals, wheat, oats, barley, corn, &c.) from the weather, and again sown in due season, when heat and favourable circumstances return; explaining, too, another reason of the slow or arrested growth of plants during winter, from the congelation of the sap-proteine, or this protoplasm physical basis of life. The ice, or freezing method of preserving meat, is certainly an approximate or fair attempt to copy Nature's complex laws, but in the subsequent process of thawing, the

meat must likewise become unwholesome, arising through the establishment of rapid decomposition. Vegetables, of course, derive their vitality more readily than animals, and more directly from the atmosphere. All, however, consist chiefly of carbon, oxygen, nitrogen, and hydrogen, justly and accurately apportioned and distributed to suit each other's life and organic composition, showing the many wonderful designs in the construction of the delicate mechanism of life, set in motion by the hand of an all beneficent and wise Creator.

Some sceptics ask, "Why, then, does not protoplasm in the human brain develop itself into green leaves and oyster shells?" What an absurd question to ask, for leaves are but an immediate medium through which the protoplasm is matured and perfected, in order to be again reproduced, to complete the link existing between life and death—animate and inanimate nature. The oyster shell only serves the same purpose (conservation) to the animal that the husk does to the grain, the eggshell to the egg, the house as the dwelling of the septic, merely as an outer film, or protective covering, of inorganic, inferior, or refuse matter, discharged from the laboratory of Nature, while the protoplasm is in the act of arriving at perfect maturity, as well as complete reproductive vitality. It is impossible, however, to expect vegetable protoplasm without leaves, any more than animal protoplasm, or life without lungs, or oysters without oyster shells, or wheat, or other grain without husks. We must not look at isolated, detached portions of Nature to explain a whole; but we must look fairly at the whole itself, or rather the complex processes that are essential to bring the whole to perfection. A sugar lolly and a leaden bullet are two separate and distinct substances, moulded and prepared by two very different methods; so the same, too, with the nature of animal and vegetable protoplasm—the type of their preparation constitutes their distinction. Each and all must be brought to a final state of perfection through its own mould, or process of preparation. The critic, or quibbler, may argue that the substance of the lolly and that of the lead are very different; I readily grant the exception; but the mould, or construction, constitutes the analogy, and so must the *vital mould* be to the protoplasm, as it passes through the varied and distinct species of animated nature. To the best of my ability, I have endeavoured to make this intricate matter as concise, simple, explicit, and distinct as possible, so that even, I should hope, the veriest dunce may even be able to understand and comprehend its meaning. If I have failed, however, to give expression to lucid sentiments, in explaining the difficult task, then the forbearing reader must only be content to take the will for the deed. The microscope teaches us that there is a difference in the size and form of the blood corpuscles contained in different animals. If their size and form differ, so also must their granulated contents differ in accordance with their own species. The operation is, I admit, both difficult and delicate of verification. It is

impossible, however, to construct a sound, healthy, strong constitution of body in the same principle or manner, and on the same vapid materials that are usually resorted to in the composition of some of our nilly-nally colonial Governments—as void of shame and public vitality as a corkserew is of music.

We have had, of late an attempt made to concentrate, by artificial means, these very protoplasms, in the shape of Liebig's essence of food, which in an imperfect manner resembles grain, seeds, fruit, eggs, &c., which all contain them in a naturally concentrated and reproductive form, only awaiting the specific influence or action of some vitalizing element to again set them into activity, life, and vitality.

Can perfect life, strictly so speaking, be propagated without the aid and existence of two distinct sexes? Is the sun and moon in their actions not one of the first great lessons in this obtrusive vital law of creation? Is a union or repulsion of positive and negative electricity not productive of thunder and lightning, and is rain, again, not the consequence? Is this rain, again, under the influence of the sun and moon's action, not at length brought back again to its original electric condition, and thus kept in vital motion through the one same universal law of creation—action and re-action? Chrysalis life is, in reality, as much a falsehood as to say the sun is rising, for the larva or egg must surely have previously been deposited in or on the body of the dead chrysalis, which is now to become a kind of matrix and food in nourishing the young larva, that surely first sprang from the union of antecedent life of other live insects. An egg is non-productive without the reciprocal union of both sexes has previously and completely taken place. The reader must not confound these functions, that are rather physical than vital. When the vital functions are not at work, then the nutritive or physical operations are in most active play, in building up and repairing the waste of the body. The balance of vital economy, *e.g.*, the quantity of coal, varies in its steam power-producing properties; so must different kinds of food vary in its effects in producing different states of health and strength.

It is for this very reason that wheat, or any other grain, after once having been ground, and long kept, very soon begins to lose its strength, wholesome nutriment, and vitality. Every particle, even to the very germ, or germinal matter itself, is all ground together and intermixed into a heterogeneous mixture, which, when kept long in this state, soon begins to lose its adhesive, nutritious qualities and vitality. Only crack a lot of eggs, put their contents together, and serve them in the same way as is done with wheat, and I am sure the simplest mind can then understand what I mean, and what the result will be. No matter how ingenious the method of preservation may afterwards be, I contend that the egg-flip mixture will never again retain the same amount of wholesome nutriment contained in the original unbroken egg. How irrational, then, is it to expect to keep flour wholesome and nutritious after once it has been ground. It is strange to me to think that these vital matters should have so long escaped the notice of

ordinary thinking minds, far less scientific men, as they seem as palpable as the sun at noonday. Destroy these concentrated protoplasm, and the food, also, in my opinion, becomes destroyed. It is for nature to do so, not the flour mill. Cooking in a measure does the same—disintegrates it, but then, again, food in this state is generally very soon afterwards consumed, before the cooked food has lost any of its real intrinsic qualities.

The mockeries of the world are many, but what epithet shall we apply to those who are duped by the transparently false allurements of the world.

In a previous part of this paper we briefly glanced at the nature, nidus, and vitality of vegetable parasites. At the risk of being accused of prolixness and impertinence, we may next be permitted to add a few additional incidental remarks here on the character of what may be termed another class of parasites, viz., clerks and Civil Servants, &c. In this arrangement I do not desire it to be supposed that I speak either sneeringly or disparagingly of this portion of our community, as it is only introduced here indirectly, rather than as a specific link in the chain of our argument. But I contend, and, indeed, firmly maintain the principle, that once any person becomes a Civil Servant, they inevitably impair their usefulness, by being bound down to an almost endless, unchangeable routine (like the pin-maker), lower their status, and in a modified sense, lose also a large portion of their freedom, independence, vitality, and liberty, as responsible beings. Physically they, probably, live on all the same; but both bodily and mentally, they become as much a species of parasite or vampire, which sucks and preys on the industry and labour of a superior class of self-supporting fellow-workers who have never sacrificed their independence, or bartered away their liberty for a little temporary gain. If the public official is to be recognised as a free-thinking, independent citizen, why then should he be unjustly deprived of the privilege of exercising the franchise, and all other public rights belonging to free men? Reader, don't rashly jump at conclusions, or even petulantly endeavour to misconstrue this assertion into any other but its one strict, literal, intended import. Rather, at once, lay the subject aside, than allow the imagination to become distorted by erroneous impressions never intended to be conveyed, far less imputed, by masked innuendoes in these few, free, open, candid remarks.

The physical basis of life, as we have already seen, have all to undergo their own distinct process of preparation ere they are set in motion, or made subject to one uniform, perfect, harmonious action, so must the social mould be which fosters the formation and existence of Civil Servants. This brings me, now, to the consideration of the chief or vital point of this disagreeable part of our subject, which I aim at laying before the reader's notice, and it is this:—The man, I contend, who begets a family, while wholly engaged in, and occupying the routine drudgeries pertaining to official duties, must,

and does, create the same identical hereditary qualities, idiosyncrasy, taste, or disposition, in his offspring, who, in after life, as they come to grow up, assuredly can never again acquire or inherit anything like future independent action or freedom of life. The feeling for office life, assistance or support, subsequently grows and clings as much to the child as it formerly predominated in the parent. As they come to grow into manhood, the in-bred desire for situations and subordinate offices (and life) grows and ripens, also, no doubt, with them, and thus, it may be said, that originality, inventive skill, or ingenuity, are often then entirely lost or destroyed to the world and themselves. In this way—an endless process of evolution—we may attempt a feasible explanation, however vague, of the different degrees of development and diversity existing in the type of the human brain, but nobody, surely, but downright illiterate jackasses or idiots, would ever think of believing in such a preposterous doctrine as the delusive principles of Phrenology. At this present time we have no less than five thousand Civil Servants paid and employed by our Colonial Government, to transact the business of only half-a-million of inhabitants. On this calculation, and taking four as a multiple (say the average number of males to each family), in sixteen or twenty years this colony, it is self-evident, will then be overrun by a host of Civil Servants, billet seekers, or situation hunters (even allowing for deaths) to the tune of something like twenty thousand people ; and in sixty years, still taking four as the multiple, there will be no less than three hundred and twenty thousand looking for public employment, in some capacity or other. The reader may startle and laugh at the idea, and at my expense, too, if he chooses ; but if the State cannot find employment for this number of expectant idlers, the result, inevitably, must be destitution and depravity, or else a corresponding burden and loss to the Commonwealth, since these very young men are originally conceived and brought forth into the world void of that freedom which should constitute (strictly speaking) independent life and action. Sneer at the idea those who can, and welcome ; but no one will convince me that it is not the life and cognate conduct of the parent alone from which the child receives its good or bad temperament, good or bad ruling, and qualities which are to mark its future career in this world, whether it be a successful or unsuccessful one. Educate as you will, or train as much as you like, all subsequent supervision in a sense, now falls short of either altering or biasing the original inbred good or bad type or qualities of the child acquired through the conduct or misconduct of the parent. To suppose or think otherwise would be but as irrational, as it is contrary, to one of our most leading Scriptural precepts, which saith, “What is conceived in sin must again come forth shapen in iniquity ;” or, “as we sow, so shall we reap.” Not by this that Civil Servants are, by any means, conceived in sin, but rather that they are begotten of the type of billet-seekers and situation hunters. Their sole dependence, in other words, grows up and is placed in others, and not on their own indi-

vidual sterling capacity or independence. We may, by this means, and on this principle alone, go a step further and trace the whole formation and function of society, not only the present, but also what it will even be in the future. Not that exceptional cases, for there are exceptions to every rule, would tend in the least degree of break or upset the argument or principle, one that is so generally and unerringly diffused throughout every order of nature. The Civil Servant, who begets a family, begets also additional members, who must, in some department or other, likewise seek for employment, or be added, in some way, to the Civil List. It seems a fact, which no rational, thinking mind can easily attempt, I think, to deny, far less refute. If so, then we may as well try to refute the unerring laws of nature, or even the authenticity of the Bible. By way of rendering our reasoning a little more tenable and explicit, we shall, as another simple illustration, only select the case of a clergyman's family, and what do we usually find? The clergyman, like the official, receives his salary, and is equally as much a public servant, in the strict sense of the word, and therefore, he, too, has lost his individual independence by the alienation of his clerical and mental capacity to others. When a father, then, don't inherit separate and distinct qualities of freedom and life, it is not natural or rational to suppose that his children can possess them after him. The parent's first duty and care for his family as they come to grow up, is to try to get them also into eligible situations or life billets, and they also, again, become lost, in a sense, to the world, and, I may likewise add, to the spirit of reform, originality, invention, and discoveries. Adversity, as the old adage, says, is "the only real mother of invention," but here, even, and at this early stage of the life, the parent seldom allows it a fair or favourable opportunity of becoming developed until, probably, the son is, as it were, forced into some kind of monotonous, lifeless, dreary situation, and there to remain, like his parent, a mere automaton fixture or life pensioner. It is not the child, but the father's fault, who, at first, was tempted to forsake freedom and independence for a certain salary, and a livelihood, probably, more easily obtained, in place of being compelled to rely, or trusting to the mere casualities of the world, and thus the youth absolutely becomes, and is made but to assume the same identical reflex disposition and condition in conformity, and in strict keeping with the laws of its own originally impregnated nature. Education may assist in sharpening these hereditary qualities, but it will never have the salutary effect, I fear, of changing, establishing new, or of overcoming inbred, predominant features in the pupil, to fit it to battle against any other calling or purpose than that for which it was originally destined by nature. Again, I say, and do maintain, that an intemperate or drunken father, or parent, will assuredly also beget children that will be addicted to the self-same kind of evil propensity. Once alter the law, and the physical basis of life must reproduce its own counterfeit. To effectually eradicate drunkenness (or other evil habits) parents

must first begin by becoming thoroughly strict total abstainers from every kind of intoxicating liquors. Sons of Temperance and Daughters of Temperance is all bosh. The real genuine reform must emanate and begin at the fountain, viz., the parents. To think of reforming the offspring of parents that are confirmed tipplers or drunkards, is worse than madness. Let every parent conduct himself in a prudent manner, and I say children will never then be ushered into this world to afterwards disgrace them. A good, temperate child is but the reflex of a good, temperate parent. If the physical basis of life be not contaminated and corrupted at its fountain, neither, also, will the offspring be polluted or defiled; then there will be less need of temperance or other useless kindred, trashy institutions. The vicious, vile evil, undoubtedly, multiplies itself in a ten-fold ratio as much as grain, when sown, does again multiply its own seed. In my mind's eye, in New South Wales alone, I can now see father and two or three sons, all filling Government offices.

Only look at the contents of the following extract, from the *Empire*, of 10th May, 1872, of a speech made by the Premier of New South Wales, in the Legislative Assembly:—"In reply to the statements made by Captain Onslow, he said that, no doubt, improper appointments were made, but they would continue to be made to the end of the chapter. He had no doubt that when the hon. member was made Premier, he would find it impossible to resist the importunities of John Jones to be appointed Police Magistrate. (Laughter.) And if he did not yield to this request of John Jones, who was notoriously unfit, and his friends, the chances were, that Captain Onslow would soon find himself out of office. (Laughter.) In regard to the Civil Service Examinations, he (Sir James Martin) did not believe in them. Civil Service Examinations were a failure in India, and were laughed at by all sensible people there, &c., &c." (For fuller details see *Sydney Morning Herald* of the same date.)

Here is a startling and most humiliating spectacle for a Premier to disclose of the management of a colony to the representatives of a Legislative Assembly, and in the face of an over-taxed, burdened public—man, woman, and child paying at the rate of £5 and £6 per head annually! To say that the only way of keeping in office, and carrying on a Government, is to yield to the importunities of John Jones to be appointed Police Magistrate! "And if he did not yield to this request of John Jones, who was notoriously unfit, and his friends, the chances were that Captain Onslow would soon find himself out of office!" Reader, here is a simple and plain secret of the working of Colonial Government, not (we are told by a Premier) making laws for the prosperity and settlement of the colony, or the general good, well-being, and advancement of the people, but in order simply, apparently, to make John Jones, and other ignorant, lazy idlers, Police Magistrates, or pensioners on the State, &c., &c.! Here is a palpable reason why the colony, and every little inland town, contain-

ing two or three hundred people, throughout the interior, is overrun with a host of useless, ignorant, and extravagantly paid Police Magistrates, drawing salaries of £400 and £500 a-year. Making appointments, observe, not for the absolute benefit and welfare of the people, but, you perceive, in order to please John Jones, and to keep rotten Governments in office! England, Ireland, and Scotland, read, and tell us what you think of this style of Government; or if New South Wales, with all her gold, rich mineral treasures, fertile, virgin land, and cheap grass, is a fit and proper home for a poor man, or any struggling, industrious family to live in? Search the known wide world, and can we find worse than ignorance, and unprincipled statesmanship equal to what exists in New South Wales? That the late Governor (Earl of Belmore) did a most wrong and unconstitutional act in granting a dissolution of Parliament in the teeth of an adverse vote by an overwhelming majority of members of the House, the Press and even the very people since proved to be a fact by the unmistakeable result of the issue of the late general election, which terminated by returning large odds of members (three and a-half to one) against him, and the bad, unconstitutional advice of his Executive Council, or Ministry. Such conduct of a Governor well deserves to be severely reprimanded by the Imperial Government, in order to put a final or future check and protection on the rights and liberties of the majority, and the people being trampled on with hauteur and impunity.

In short, I may venture to state, that nearly the whole of the Civil Service is chiefly composed, if not wholly monopolised, by this element, or one single class alone, viz., offspring of those who have previously sprung from the descendants of original situation-holders, in some capacity or other. Father, son, or son's son, filling all, or nearly all, the public billets. Very, very few offspring, indeed, of our really deserving poor class do, seldom or ever, find their way into Government situations; and, perhaps, it is a blessing that such is the case, if poor people could only be convinced or taught to distinguish the great and everlasting mischief and injury a temporary gain and office is ever afterwards likely to inflict on themselves and their unfortunate children. I shall only quote one illustration in support of this principle, taken from the twenty-eighth page of Mr. Samuel Bennett's excellent work, "*The History of Australian Discovery and Colonization*," a book that ought to be in the library of every settler in the colony. The paragraph says—"But those whose lives have run in grooves, whose conduct in all common affairs has been guided by stringent conventionalities, whose experience has been confined to the quiet, dull routine which prevails in countries like Holland, are probably less able to command their passions, and to regulate their conduct under novel and exciting circumstances, than men whose experience has been wider, whose lives have been less regular, and whose will and instincts have had freer scope." No one for a moment, I think, can doubt but that a sameness of routine cramps the best feelings of

freedom and peosperity of many a promising, intelligent young man. Acceptance of office has too often been their death-blow, that trammels the expansion of the mind, independence, and the development of many useful works, and never-dying actions, all buried in the ever-revolving drudgeries of official routine. We have only to look down the list of names on the Civil Service examination roll, and there we find the majority of the candidates are nearly all sons of our Civil Servants, even of our Professors. So that college education, seemingly, does not teach men the royal road to self-reliance, independence, or even originality, otherwise Professors surely would never bothier themselves looking after such petty billets for their sons, while holding such elevated, eminent seats in the sanctuary of learning. Men possessed of such mighty, refined minds, ought surely to make the worth of education and learning rate at a higher standard than menial situations and official bondage. Only deprive officials of their office, and you may say the majority would be for ever ruined, because now they have lost their all, and have little or no real self-reliance to depend on for future assistance and support. Instead of at once setting to and energetically striving to conquer and battle against the numerous hardships and adversities of the world, many contentedly sit down in idleness, and in a state of semi-starvation, and keep wait, wait, waiting for a chance situation to turn up, rather than they would make the least effort to create work, attempt to obtain an honest livelihood, however menial, or even endeavour, in any legitimate way, to try to regain or keep their lost freedom, and independent action, outside this one single, circumscribed, routine occupation, which most probably, from birth till death, engrosses all, or nearly all, their thoughts, hope, and care. It may be said that we are all born of Adam, and that all inherit sin, but surely some are more anxious, and liberally endowed with endurance and perseverance than others, in trying to improve their circumstances and condition in life, by placing greater faith on self-reliance, in place of, as I fear, too commonly the rule now-a-days, always trusting and perpetually depending on the precarious charity and help of friends and others. There is surely a plain and palpable parallel analogy existing between these two simple illustrations. Every man, as the song says, should "paddle his own canoe." Man—a free being—should be subject to less restraint, misplaced indulgence, kindness, and support, then we might witness fewer failures in life, less misery, disappointment, and love for office life, and we might naturally, also, expect more real comfort, happiness, prosperity, independence, and more vigorous bodily and mental life and vitality. If the principle, *similia similibus curantur*, be an irrevocable one, then I say, on the other hand, like also must produce like—a slave will produce a slave, and a free man a free man. The infidel, the sceptic, the fool, hath said in his heart "There is no God ;" but let such only shew us one solitary instance or flaw in this mighty, endless, unerring chain of laws of God's divine creation ! Casual ills, or adversities of life (as if prone by nature) are

too frequently and falsely attributed to an Omnipotent chastisement, whose wisdom is slow to anger, whose hand is slow to punish. The Scottish bard, Burns, tells us, in his immortalised words, "*That man's inhumanity to man makes countless thousands mourn.*" Possessed of five senses, and surrounded by five powerful levers, viz., the Bible, printing, steam, land, and liberty, the standard of physical happiness is much in our own hands. The infinite creation has been set into uniform motion; why, then, should man doubt and growl, because in his finite power, and profound manifest ignorance, he should fail to keep up the enduring vitality of these laws, which he daily strives to divert, transgress, or else, to make more subservient to his own base, selfish, temporary purposes, in place of for the glory and everlasting honour of an Almighty Ruler. Leave people to the undisturbed possession of their wealth, pleasures, and enjoyment, and we want no God; but reverse circumstances, and subject them to a little more than ordinary misfortune, the result as a certainty is almost sure to be assigned to the intervention of Providence, as a problematical kind of chastisement. At one time, God's laws with some are always perfectly just and unerring; at other times, they are equally made both changeable in wisdom, goodness, and truth. Christ, when meekly enduring an agonizing death on the Cross, did not think that God's laws were either too unmerciful, undeserved, or unjust; it was the calm endurance of physical punishment which enabled him to obtain everlasting happiness, not made by hands, but by an Omnipotent, Omniscient Father, whose mercy and goodness lies in His stripes and His displeasure in our worldly prosperity. The death of the body is but the birth and vitality of the soul. Riches and carnal happiness tend to sin; adversity, the lamp that leadeth to our good, and future state of blissfulness. The birth of a comet is no less known to God than the death of one of the meanest of his creatures, or the pettiest race of insects that crawl. Under man's ever-changing, fickle government, man is God; but under divine, unerring law, God is God. Man may be prodigal, but God's laws are inexorable. One law and one fiat, be it the safety of a steamship on the mighty deep, the largest or smallest fish, the meanest or largest race, be it insect, fish, bird, fowl, animal, vegetable, or reptile, and even proteus.

But finally, should these few random cogitations fall short in any way of the exact standard of facts, then let them (those who choose) be called chrysalis formations, or unripe, crude speculations, on their road, sooner or later, to become incontrovertible, vivid truths, for truth is to mind, spirit, and soul, what protoplasm, I believe, is to health, life, and vitality. The heavens and this physical earth will pass away (but not by the newly-foretold, all-devouring, approaching comet) like a flaming scroll, but "truth and spiritual vitality" live on for ever and ever. Let God be true, should every man be a liar.

Molong, New South Wales,

19th April, 1872.

